AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (currently amended) A system for inspecting electrical circuits comprising:

a boundary identifier operative to generate a representation of boundaries of elements in an image of an electrical circuit which is under inspection; ~~and~~

an element matching defect identifier operative to receive said representation of boundaries of elements and a reference representation including reference boundaries for said electrical circuit and to compare boundaries in said representation of boundaries to said reference boundaries to identify element matching defects, said element matching defects including at least one of: elements in said reference representation but missing from said representation of boundaries, excess elements in said representation of boundaries that are missing from said reference representation, and elements in said representation of boundaries defining a different type of element than a corresponding element in said reference representation; and

a boundary defect identifier operative to receive said ~~representation of~~ boundaries of elements in said electrical circuit under inspection and to compare ~~at least~~ a plurality of coordinates ~~of some locations of~~ along at least a portion of some boundaries ~~in said representation of boundaries of elements~~ with reference to a corresponding region of acceptable ~~location~~ coordinates for said portion of some boundaries to ~~identify~~ detect boundary defects, ~~in said electrical circuit.~~

2. (original) A system according to claim 1, and wherein said boundary identifier is operative in hardware.

3. (currently amended)) A system according to claim 1, and wherein said boundary defect identifier is operative in software.

4. (currently amended) A system according to claim 2, and wherein said boundary defect identifier is operative in software.

5. (currently amended)) A system according to claim 1, and wherein said ~~defect~~ boundary identifier is operative to compare an actual location of at least one boundary from among said boundaries in said image of an electrical circuit under inspection, to a location of a corresponding boundary in at least one reference ~~image~~representation.

6. (original) A system according to claim 1, wherein said boundaries comprise contours.

7. (currently amended) A system according to claim 1, and wherein said ~~system further includes a putative defect detector~~ element matching defect identifier is operative to identify at least some putative defects.

8. (currently amended) A system according to claim 7, and wherein said boundary defect identifier is operative to analyze~~, from among said~~ at least some boundaries~~, those boundaries~~ that are associated with ~~said~~ defects other than putative defects.

9. (currently amended) A system according to claim 1, and wherein said system ~~farther~~ further includes a region of interest identifier operative to identify a portion of said image of an electrical circuit which is under inspection as being a region of interest.

10. (currently amended) A system according to claim 9, and wherein said boundary defect identifier is operative to analyze, from among at least some boundaries, only those boundaries that are in said region of interest.

11. (currently amended) A system according to claim 8, and wherein said system further includes a region of interest identifier operative to identify a portion of said image of an electrical circuit which is under inspection as being a region of interest, and said boundary defect identifier is operative to analyze at least one characteristic of said at least some boundaries that are in said region of interest.

12. (currently amended) A method for inspecting electrical circuits comprising:

generating a representation of boundaries of elements in an image of an electrical circuit;

detecting element matching defects by comparing said boundaries in said representation of boundaries to reference boundaries in a reference representation of boundaries for said electrical circuit, said element matching defects including at least one of: elements in said reference representation but missing from said representation of boundaries, excess elements in

said representation of boundaries that are missing from said reference representation, and elements in said representation of boundaries defining a different type of element than a corresponding element in said reference representation; and

and comparing ~~at least~~ a plurality of coordinates ~~of some locations of~~ along at least a portion of ~~one of~~ said boundaries in said representation of boundaries of elements with reference to a corresponding region of acceptable ~~location~~ coordinates for said portion of said boundaries to ~~identify~~ detect boundary defects in said electrical circuit.

13. (original) A method according to claim 12, and wherein said generating is performed in hardware.

14. (previously presented) A method according to claim 12, and wherein said comparing is performed in software.

15. (previously presented) A method according to claim 13, and wherein said comparing is performed in software.

Claims 16. – 17. (canceled)

18. (original) A method according to claim 12, and further including identifying a portion of said image of an electrical circuit as being a region of interest.

19. (canceled)

20. (currently amended) A method according to claim 12, wherein said corresponding region of acceptable ~~location~~ coordinates comprises an envelope around the at least one boundary in the at least one reference ~~image~~ representation.

21. (currently amended) A method of manufacturing an electrical circuit comprising:

acquiring an image of at least a portion of an electrical circuit and inspecting said image for defects in said electrical circuit, said inspecting including: generating a representation of boundaries of elements in the image; ~~and~~

detecting element matching defects by comparing said boundaries in said representation of boundaries to reference boundaries in a reference representation of boundaries for said electrical circuit, said element matching defects including at least one of: elements in said

reference representation but missing from said representation of boundaries, excess elements in said representation of boundaries that are missing from said reference representation, and elements in said representation of boundaries defining a different type of element than a corresponding element in said reference representation; and

comparing a plurality of coordinates ~~of some locations of at least one~~ along at least a portion of said boundaries in said representation of boundaries of elements with reference to a corresponding region of acceptable ~~location~~ coordinates for said portion of said boundaries to ~~identify~~ detect boundary defects in said electrical circuit portion.

22. (original) A method according to claim 21, and wherein said generating is performed in hardware.

23. (previously presented) A method according to claim 21, and wherein said comparing is performed in software.

24. (previously presented) A method according to claim 22, and wherein said comparing is performed in software.

Claims 25. – 26. (canceled)

27. (original) A method according to claim 21, and further including identifying a portion of said image of an electrical circuit as being a region of interest.